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Construction of Norms for Health Related Physical Fitness for 16 to 18 Years College Men Students

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Abstract:

The purpose of the study was to construct norms for health related physical fitness for 16 to 18 years pre university college men students. A sample of 2020 pre university men students was taken for the present study. The muscular strength measured by chin-ups, flexibility measured by bridge up test, body composition by skinfold tests, general physical fitness factor by measuring body weight and cardio-respiratory endurance measured by 1500 meters run/walk tests were conducted for data collection. Norms were constructed for the health related physical fitness such as percentile and T scale and standard for evaluation of college student male also established under normal distribution.

Key words: Norms for Health, Health Related Physical Fitness, Physical Education, Sports policy

Introduction:

Health and physical fitness have a vital role in the life of men from time immemorial. The progress of the Nation lies in the

hands of the people, who are healthy and physically fit. Every individual should develop physical fitness for a happy and effective living. In order to get physical fitness one has to involve in physical activities.

Health, according to World Health Organisation (WHO), is the state of complete physical, mental and social well being. The stated aim of the WHO is the attainment of the highest possible level of health by all people. Physical fitness, on the other hand is defined as "the ability to carry out daily tasks with vigour and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and to meet unforeseen emergencies" (Gian and Tch, 1988). There is an optimal level of fitness for everybody. For some, striving for fitness will mean reducing their risk for disease while achieving physical health benefits. For others, fitness is for a high order of athletic functioning.

Need for Health-Related Youth Fitness This research relating exercise and fitness to health has been based primarily on adults. However, three important research trends strongly support the need for health-related youth fitness programmes. A reason supporting the need for sound health-related youth fitness programme is that adulthood characteristic and behavior are influenced by childhood. Cardiovascular risk factors tend to be stable and predictive of cardiovascular disease from an early age.

While there have been efforts to emphasize health related physical fitness and identify its ingredients to develop and standardize test norms of youth in the developed countries like the United States, there is apparent apathy in India towards the basic health related physical fitness, we in India, still seem to be promoting the same old idea of motor fitness through the tests that measure one's athletic ability like speed, power, agility, and endurance. Moreover, the test items included in the traditional batteries physical fitness are highly specific. They have also concluded that there is no such unitary

function as coordination, flexibility motor ability, agility and so on. There is also no such thing as the coordination test and the test of explosive power, therefore, the existing physical fitness test batteries are not even based indicators for broad spectrum of sports disciplines to say the least the components, which these test items purport to test, do not even promote health and wellbeing of the youth. They only advance a false sense of athletic prowess. To formulate the standard norms on the basis of selected anthropometric and motor qualities in the form of percentile is to determine their present fitness status and potentiality for specific sports activity. Since health related physical fitness battery test for 16-18 years male students of coastal Karnataka is not established. Investigator showed keen interest to develop the norms and to assess the fitness among the youth.

Methodology

The purpose of the study was to construct norms for health related physical fitness for 16 to 18 years pre university college men students. A sample of 2020 pre university men students was taken for the present study. The muscular strength measured by chin-ups, flexibility measured by bridge up test, body composition by skinfold tests, general physical fitness factor by measuring body weight and cardio-respiratory endurance measured by 1500 meters run/walk tests were conducted for data collection. The collected data analyzed with SPSS 16.0 and Microsoft excels to construct norms for test items. Three normative scales such as percentile and T scales were constructed. Further five grades i.e. Excellent, Good, Average, Fair and Poor were also established under normal distribution.

Results

The data was analyzed with percentile scale and evaluation standard of health related physical fitness for coastal region pre university male students and also deals with T-Scale. The percentile scale constructed on the basis of students' scores in terms of their standing in specified group. However percentile scale is not considered as standard scale as the mean and standard deviation are not used in constructing the scale and scores are not distributed equally. The T scale was constructed because it considers mean and standard deviation values of the distribution and also considered as the standard scale.

Percentile Norms and Standard Deviation

The percentile scale health related physical fitness for the coastal region of 16 to 18 years pre University College men have been presented as follows:

Table-1. Percentile Norms of Health Related Physical Fitness

Percentile Scores	Muscular Strength	Flexibility	Body Composition	General Physical Fitness Factor	Cardio-respiratory Endurance	Percentile Scores
100	97	88	6.13	40	545	100
95	68	71	7.7	44	502	95
90	62	62	8.48	46	481	90
85	58	58	9.26	48	458	85
80	54	54	10.04	49	433	80
75	52	51	10.83	51	425	75
70	49	48	11.61	52	418	70
65	47	46	11.61	53	409	65
60	44	44	12.39	54	402	60
55	40	42	13.18	55	397	55
50	38	41	13.96	56	388	50
45	36	39	14.74	58	379	45
40	32	38	15.53	59	370	40
35	29	37	16.31	60	364	35
30	27	36	17.09	62	359	30
25	25	34	18.66	63	351	25
20	22	33	20.22	65	343	20
15	19	32	22.5	67	331	15
10	16	30	24.84	71	321	10
5	11	27	31.97	76	302	5
1	4	20	44.5	92	264	1

The above table shows that the maximum scores of health related physical fitness are at 100th percentile and the minimum scores are at 1th percentile of pre university college men students. The highest scores are at the top and lowest scores are at the bottom of the table.

Table-2. Evaluation Standards for Health Related Physical Fitness for 16 to 18 years coastal region pre university college men students.

Standards	Muscular Strength	Flexibility	Body Composition	General Physical Fitness Factor	Cardio-respiratory Endurance
Excellent	74.66	70.46	1.97	37.88	509.36
Good	56.62	57.12	8.84	47.74	450.32
Average	38.58	43.78	15.71	57.60	391.28
Fair	20.54	30.44	22.58	67.46	332.24
Poor	2.50	17.10	29.45	77.32	273.20

The T scale was constructed. It is considered as standard scale because it is based on mean and standard deviation values. This scale for the college men student has been presented as follows:

Table-3. T-Score for Health Related Physical Fitness Test 16 to 18 years pre university college male students.

T-Score	Muscular Strength	Flexibility	Body Composition	General Physical Fitness	Cardio-Respiratory Endurance	T-Score
10	-33.58	-9.58	43.19	97.04	155.12	10
20	-15.54	3.76	36.32	87.18	214.60	20
30	2.50	17.10	29.45	77.32	273.20	30
40	20.54	30.44	22.58	67.46	332.24	40
50	38.58	43.78	15.71	57.60	391.28	50
60	56.62	57.12	8.84	47.74	450.32	60
70	74.66	70.46	1.97	37.88	509.36	70
80	92.70	83.80	-4.90	28.02	450.32	80
90	110.74	97.14	-11.77	18.16	509.36	90

Discussion:

Construction of norms were done with the help of T Scale was constructed for coastal region pre university college men

students' age group 16 to 18 years. The percentile scale construct on the basis of subjects' scores in terms of standing in specified groups. With the help of mean, standard deviation the performance of subjects was categorized in to five standards, i.e. Excellent, Good, Average, Fair and Poor. These standards of evaluation proved under normal distribution with the help of mean and standard deviation values of health related physical fitness tests. Keeping the educational reforms in mind, there is a trend to award grades rather than the score sin order to reduce stress and anxiety among the college men students. The results revealed that health related physical fitness can be easily divided in to five categories without encountering any difficulty. Hence, grading under normal distribution proved to be the most suitable way of categorizing coastal region pre university college men students to give suitable training.

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